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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/702,419	11/05/2003	John N. Hryn	0003/01398	8338

27197 7590 03/01/2007
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EXAMINER

SMITH, NICHOLAS A

ART UNIT	PAPER NUMBER
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1742

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/702,419

Applicant(s)

HRYN ET AL.

Examiner

Nicholas A. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. Claim(s) 1-4, 6 and 21-24 is/are pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 6 and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no literal support for the bottom side of the temperature range (600°C). For the purpose of examination, Examiner will assume it was a typographical error and was meant to be 660°C.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 4, 6 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al. (US 6,436,272).
6. Regarding claim 1, Brown '272 teaches (col. 9 lines 1-8) an electrolyte for the electrolysis of alumina, the electrolyte comprising a mixture of aluminum fluoride and

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potassium fluoride, and no sodium fluoride. Furthermore, Brown '272 discloses alumina is placed in the electrolyte and is under molten conditions. Thus, it would be inherent that oxygen-containing ions would be present in the electrolyte and therefore the claimed limitation is met.

7. Regarding claim 2, Brown '272 teaches (col. 9 lines 1-8) 47 mol % aluminum fluoride and 53 mol % potassium fluoride, having a ratio of from about 1.0 to 1.5.

8. Regarding claim 4 limitation wherein the oxygen-containing ions are Al_2OF_6 and $\text{Al}_2\text{O}_2\text{F}_4^{-2}$, since the prior art has the same composition, the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See MPEP 2112. In the instant case, oxygen-containing ions are Al_2OF_6 and $\text{Al}_2\text{O}_2\text{F}_4^{-2}$ would be inherently present in the prior art electrolyte.

9. Regarding claim 4, 6 and 21, the Examiner notes that the claims are directed to an electrolyte and not a method of using an electrolyte. The recitations in claims 4, 6 and 21 define steps of using the electrolyte and do not define the electrolyte. Therefore, the recitations in claims 4, 6 and 21 will be given no patentable weight. In regards to claimed composition of claim 21, Brown '272 discloses as stated above in paragraph 6.

10. Claims 1-2, 4, 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al. (US 6,379,512).

11. Regarding claims 1-2, Brown '512 teaches (col. 14 lines 30-38) a potassium fluoride / aluminum fluoride electrolyte for the electrolysis of alumina have 45 mol % aluminum fluoride and a ratio of about 1.0 to 1.5, and not containing sodium.

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Furthermore, Brown '512 discloses alumina is placed in the electrolyte and is under molten conditions. Thus, it would be inherent that oxygen-containing ions would be present in the electrolyte and therefore the claimed limitation is met.

12. Regarding claim 4 limitation wherein the oxygen-containing ions are Al_2OF_6 and $\text{Al}_2\text{O}_2\text{F}_4^{-2}$, since the prior art has the same composition, the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See MPEP 2112. In the instant case, oxygen-containing ions are Al_2OF_6 and $\text{Al}_2\text{O}_2\text{F}_4^{-2}$ would be inherently present in the prior art electrolyte.

13. Regarding claim 4, 6 and 21, the Examiner notes that the claims are directed to an electrolyte and not a method of using an electrolyte. The recitations in claims 4, 6 and 21 define steps of using the electrolyte and do not define the electrolyte. Therefore, the recitations in claims 4, 6 and 21 will be given no patentable weight. In regards to claimed composition of claim 21, Brown '512 discloses as stated above in paragraph 11.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

16. Claims 3 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown '272 as applied to claim 1 and 21 above, and further in view of (no secondary reference).

17. Regarding claims 3 and 22, Brown '272 teaches (col. 10 lines 62-64) maintaining 0.2 to 30 wt % alumina, which overlaps with the claimed range, which is prima facie evidence of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art to select the desired amount of alumina from the range disclosed by Brown because Brown teaches the same utility throughout the disclosed range.

18. Regarding claim 23, Brown '272 is applied to the claim for the reasons stated above in paragraph 8.

19. Claims 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown '512 and further in view of (no secondary reference).

20. Regarding claim 24, Brown '512 teaches potassium fluoride and aluminum fluoride in the claimed ratio, less than 2% NaF and maintaining 5 to 15 wt % alumina (col. 17 lines 1-21), which overlaps with the claimed range, which is prima facie evidence of obviousness. See MPEP 2144.05 I. It would have been obvious to one of

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ordinary skill in the art to select the desired amount of alumina from the range disclosed by Brown because Brown teaches the same utility throughout the disclosed range.

Response to Arguments

21. Applicant's has timely responded to notice of Improper RCE dated December 14, 2006.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300..

24. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ROY KING

SENIOR PATENT EXAMINER
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